

(No Model.)

L. N. JACKMAN.
INSTRUMENT OF PRECISION.

No. 283,346.

Patented Aug. 14, 1883.

Fig. 1.

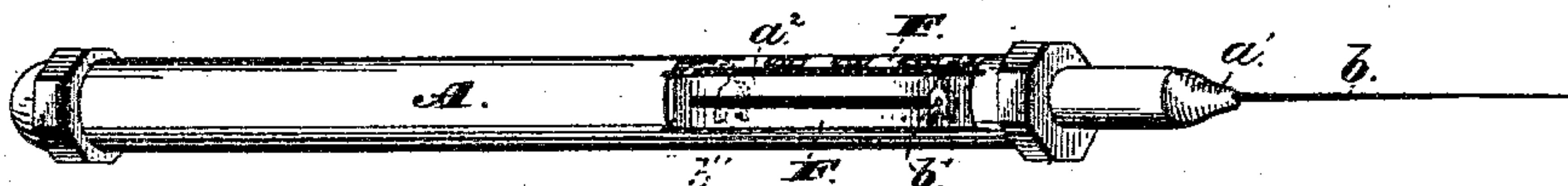


Fig. 2.

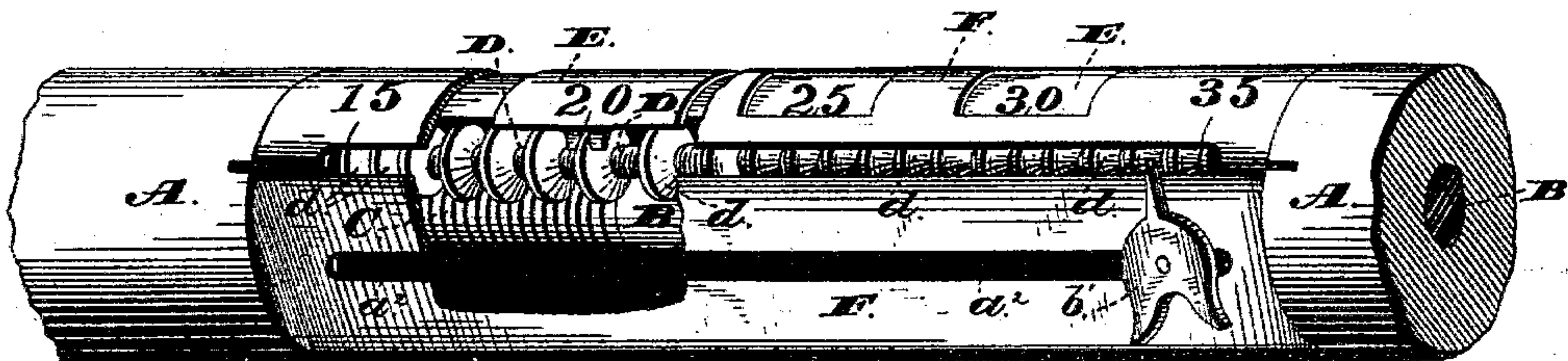
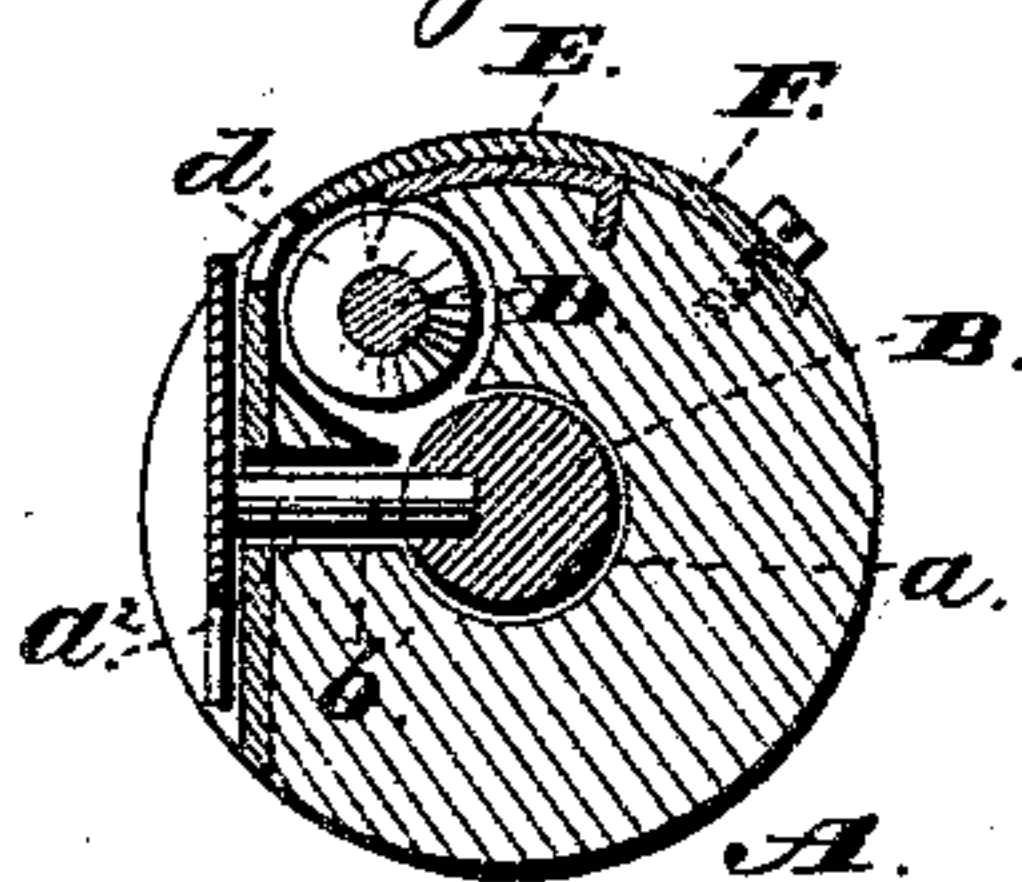


Fig. 3.



Witnesses:

Jas. E. Hutchinson.
Henry L. Hazard.

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L. N. Jackman, by
Prindle & Russell, his Attys

UNITED STATES PATENT OFFICE.

LEMUEL N. JACKMAN, OF ELGIN, ILLINOIS.

INSTRUMENT OF PRECISION.

SPECIFICATION forming part of Letters Patent No. 283,346, dated August 14, 1883.

Application filed April 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, LEMUEL N. JACKMAN, of Elgin, in the county of Kane and in the State of Illinois, have invented certain new and useful Improvements in Instruments of Precision; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my gage as arranged for use. Fig. 2 is a like view, enlarged, of the portion containing the adjustable scale, and Fig. 3 is a transverse section of said gage upon a line passing through the scale.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to enable jewel-gages and other instruments of precision to be easily and accurately adjusted when new, or when from use they have become inaccurate; and to this end said invention consists in an instrument of precision provided with a scale, of which each division is separately adjustable, substantially as and for the purpose hereinafter specified.

While my invention is applicable to all instruments of precision, it will sufficiently illustrate its principle and advantages to show its use in connection with one form of such instruments—a jewel-gage.

In the annexed drawings, A represents a round stock or handle, being about the size of an ordinary lead-pencil, and provided with an axial opening, a , that extends from one end nearly to the opposite end of the same.

Within the opening a is loosely fitted a round bar, B, which at one end is provided with a round tapering needle, b , that is formed of hardened steel, has a length of about one and one-half inches, and passes outward through a metal box, a' , which is secured upon the end of the stock A and reduces said opening a at such point to a size sufficient only to permit of the free longitudinal movement of said needle.

In rear of the bar B is placed a spiral spring, C, which operates to hold the former with a light yielding pressure at the opposite limit of its motion against the box a' , with the needle b projecting from said box, while a stud, b' , projecting from said bar radially through a longitudinal slot, a^2 , formed in one side of

the stock A, acts as a pointer to indicate upon a suitable scale, secured to or formed upon said stock adjacent to said slot, the relative position of said bar and the distance to which the same and said needle have been moved inward from their normal positions. The taper of the needle b is such as may be necessary in order that pivot-jewels for watches having certain sizes of openings may be placed upon the same, the jewel having the smallest opening being able to pass but slightly beyond the point, while those having the largest openings will pass nearly to the box a' .

In use of the instrument each jewel to be gaged is placed upon the needle b and moved over the same until it reaches a point when the latter just fills the opening of the former, after which said needle will be moved inward until said jewel impinges upon the box a' and further motion in such direction is arrested. The operative now notes the position of the indicator b' with reference to the scale, and, removing the jewel, places the same in a receptacle designated by the number thus indicated.

It will be readily seen that while the instrument is in perfect condition its indicated measurement will be accurate and reliable; but experience has shown that after a few days' use the needle becomes sufficiently worn in places to render untruthful the indicated size of jewel-openings, and it has heretofore been customary to construct a new scale corresponding to the worn condition of the needle, in order that the instrument might be once more capable of perfect work. The time and labor required for such readjustments of the instrument have caused it to be used after its record had become unreliable; and, as a result, jewels then gaged by it could not be relied upon to have the indicated size of pivot-opening, and much trouble was thus occasioned in the setting up of watch-trains.

To obviate the difficulties named and to render easy the readjustment of the instrument, I place at one side of the slot a^2 and parallel with the same a screw, D, upon which are a series of disks, d , that are threaded interiorly and are capable of separate and independent rotation thereon. Said disks correspond in number to the desired divisions of the scale, and, in fact, form a scale for use in connection with the indicator b' . For convenience every

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 fifth disk engages with and carries along a metal plate, E, which bears a suitable number, and the whole is covered by a plate, F, that is provided with openings through which said
 5 disks *d* and numbered plates E may be observed.

When it is now desired to test and adjust the instrument, standard jewels are placed upon the needle and the position of the indicator noted, and if, as is certain to be true, the
 10 wear of some portion of the said needle causes the scale to be incorrect, the disks *d* are turned until they coincide once more with the indicator. This operation requires so little time
 15 as to render practicable a daily readjustment of the instrument, and, thereby, the perfectly accurate classification of the jewels.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

20 An instrument of precision provided with a scale, of which each division is separately adjustable, substantially as and for the purpose specified.

In testimony that I claim the foregoing I
 25 have hereunto set my hand this 4th day of April, 1883.

LEMUEL N. JACKMAN.

Witnesses:

GEO. HUNTER,
 W. H. CLOUDMAN.